

LISTING AND AMENDMENT OF THE CLAIMS

Claims 1. – 23. (Canceled)

Claim 24 (Currently Amended): The method of ~~any one of claims 54-56~~ claim 54 wherein the RNA comprises mRNA.

Claim 25 (Canceled)

Claim 26 (Currently Amended): The method of claim ~~25~~61 wherein the mRNA that is essentially not expressed in a non-cancer cell in the body fluid comprises all or a portion of a transcript of a gene selected from the group consisting of a CEA gene, a CK20 gene, a MUC1 gene, a tyrosinase gene and a MAGE3 gene.

Claim 27 (Currently Amended): The method of ~~any one of claims 54-56~~ claim 54 wherein the DNA that is detected comprises genomic DNA selected from the group consisting of genomic DNA comprising a genomic mutation, genomic DNA comprising a gene that has undergone amplification, genomic DNA comprising a gene that has undergone loss of heterozygosity, genomic DNA comprising a translocated gene and genomic DNA comprising a gene polymorphism.

Claim 28 (Canceled)

Claim 29 (Currently Amended): The method of ~~any one of claims 54-56~~ claim 54 wherein the DNA is genomic DNA that comprises all or a portion of an oncogene.

Claim 30 (Currently Amended): The method of ~~any one of claims 54-56~~ claim 54 wherein the DNA is genomic DNA that comprises all or a portion of a tumor suppressor gene.

Claim 31 (Previously Presented): The method of claim 27 wherein the genomic DNA comprises all or a portion of a gene selected from the group consisting of a p53 gene, an erb-B2 gene, a c-myc gene, a K-ras gene, an RB gene, an APC gene and a DCC gene.

Claim 32 (Currently Amended): The method of ~~any one of claims 41-43, 61-63~~ claim 63 wherein ~~at least one the cancer-associated nucleic acid selected from the group consisting of a (i) first cancer-associated nucleic acid and (ii) a second cancer-associated nucleic acid~~ comprises a coding portion of a gene selected from the group consisting of a tissue-specific gene, a metastasis-associated gene, a steroid hormone receptor gene, a drug resistance gene, an immunomodulation gene, a cell proliferation gene and an apoptosis gene, or a complementary nucleic acid thereto.

Claim 33 (Previously Presented): The method of claim 32 wherein the metastasis-associated gene encodes a gene product selected from the group consisting of an angiogenesis factor, a motility factor, a growth factor, a matrix degradation factor and an adhesion factor.

Claim 34 (Previously Presented): The method of claim 33 wherein the matrix degradation factor is selected from the group consisting of a proteinase and a proteinase inhibitor.

Claim 35 (Previously Presented): The method of claim 33 wherein the adhesion factor is an adherin.

Claim 36 (Previously Presented): The method of claim 24 wherein the mRNA encodes a gene product selected from the group consisting of bFGF, bFGF-R, VEGF, VEGF-R1, VEGF-R2, MMP2 and TIMP3.

Claim 37 (Currently Amended): The method of ~~any one of claims 41-43, 61-63~~ claim 61 wherein the cancer cell is removed from the body fluid by a method selected from the group consisting of microfiltration, density gradient centrifugation and antigen-specific immunoadsorption.

Claims 38. – 43. (Canceled)

Claim 44 (Currently Amended): The method of ~~any one of claims 41-43, 61-63~~ claim 61 wherein ~~a nucleic acid selected from the group consisting of (i) a first cancer-specific nucleic acid and (ii) a first cancer-associated nucleic acid comprises the mRNA that is essentially not expressed in a non-cancer cell in the body fluid encodes an organotypical gene, and wherein the presence of at least one of said first nucleic acids comprising mRNA encoding an organotypical gene indicates the type of malignant disease from which the cancer cell is derived.~~

Claim 45. – 51. (Canceled)

Claim 52 (Currently Amended): The method according to ~~any one of claims 41-42, 61-62~~ claim 61 wherein steps (a) – (d) are performed before and after administering a candidate anticancer therapy to a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell.

Claim 53 (Canceled)

Claim 54 (Currently Amended): The method of claim 41-~~61~~ wherein the first nucleic acid is ~~RNA and~~ 62 or 63 wherein the second nucleic acid is selected from the group consisting of DNA and RNA.

Claims 55. – 60. (Canceled)

Claim 61 (Currently Amended): A method for determining an increased risk for or presence of a disseminated cancer cell or a ~~micrometastasizing~~ micrometastasized cancer cell in a body fluid from a subject, comprising:

(a) investigating, in a plurality of cells from a body fluid of a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell, for at least one first nucleic acid selected from the group consisting of ~~first cancer-specific nucleic acid and a first cancer-associated nucleic acid,~~ wherein either (i) said step of investigating takes place without previous removal of cancer cells from the plurality of cells, (ii) the first nucleic acid is selected from the group consisting of a first cancer-specific mRNA and a first cancer-associated mRNA, wherein the mRNA is essentially not expressed in a non-cancer cell in the body fluid, ~~or (iii) both (i) and (ii);~~

(b) isolating from the body fluid at least one cancer cell according to a method for removing cancer cells from non-cancer cells;

(c) investigating at least one cancer cell isolated according to step (b) for at least one second nucleic acid selected from the group consisting of a ~~second~~-cancer-specific nucleic acid and a ~~second~~-cancer-associated nucleic acid; and

(d) investigating at least one non-cancer cell from the body fluid for at least one second nucleic acid that is investigated in step (c) whereby a control is provided based on the body fluid,

wherein said first and second ~~cancer-specific~~ nucleic acids are different, ~~wherein said first and second cancer-associated nucleic acids are different,~~ wherein presence of said first nucleic acid in the plurality of cells and an increased or decreased presence of the second nucleic acid in the cancer cell relative to the presence or absence of said second nucleic acid in the non-cancer cell from the body fluid indicate an increased risk for having a disseminated cancer cell or a micrometastasized cancer cell.

Claim 62 (Currently Amended): The method of claim 61 wherein the first nucleic acid is a first cancer-specific ~~nucleic acid~~ mRNA and the second nucleic acid is a second cancer-specific nucleic acid.

Claim 63 (Currently Amended): ~~A The method for determining an increased risk for or presence of a disseminated cancer cell or a micrometastasizing cancer cell in a body fluid from a subject, comprising:~~

~~(a) investigating, in a plurality of cells from a body fluid of a subject known to have or suspected of being at risk for having a disseminated cancer cell or a micrometastasized cancer cell, for at least one first cancer-specific nucleic acid, wherein either (i) said step of investigating takes place without previous removal of cancer cells from the plurality of cells, (ii) the first cancer-specific nucleic acid is a first cancer-specific mRNA, wherein the mRNA is essentially not expressed in a non-cancer cell in the body fluid, or (iii) both (i) and (ii);~~

~~(b)(a) isolating from the body fluid at least one cancer cell according to a method for removing cancer cells from non-cancer cells; of claim 61 wherein the first nucleic acid is a first cancer-specific mRNA and the second nucleic acid is a cancer-associated nucleic acid.~~

Claim 64 (New): The method of claim 61 wherein said step of investigating, in a plurality of cells from a body fluid of a subject, for the mRNA that is essentially not expressed in a non-cancer cell in the body fluid takes place without previous removal of cancer cells from the plurality of cells.

Claim 65 (New): The method of claim 64 wherein the body fluid is blood and the plurality of cells is the buffy coat or a mononuclear cell fraction derived from blood.

Claim 66 (New): The method of claim 61 wherein the disseminated or micrometastasized cancer cell originates from a primary tumor.